KARL F. DEAN
MAYOR

METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

DEPARTMENT OF WATER AND SEWERAGE SERVICES
STORMWATER DIVISION
DEVELOPMENT REVIEW
800 2ND AVENUE, SOUTH
NASHVILLE, TENNESSEE 37210

February 22, 2013

Don Billingsly
Account Executive
CrystalStream Technologies
2090 Sugarloaf Pkwy Suite 135
Lawrenceville, GA 30045

RE: Metro Water Services Proprietary BMP Approval
CrystalClean Separator by CrystalStream Technologies

Dear Mr. Billingsly,

Metro Water Services (MWS) is in the process of updating our approved listing of proprietary BMPs for use in Metro Nashville and Davidson County. The Stormwater Management Manual, Volume 1 – Regulations Section 7.6 allows for the use of proprietary BMPs as Limited Application BMPs. Proprietary devices must be approved by MWS before they can be considered for use in Metro through an application and acceptance process. Metro Stormwater has adopted an interim policy that requires 50% TSS removal for pretreatment status and 80% TSS removal for full treatment status. The TSS removal efficiencies must be proven by laboratory and/or field studies that are in compliance with Technology Acceptance Reciprocity Partnership (TARP) and/or New Jersey Department of Environmental Protection NJDEP laboratory protocols as detailed in the revised Regulations Section 7.6. MWS will also accept current proprietary BMP certifications from the NJDEP. MWS will consider the results of other verification systems and review them on a case by case basis.

The following reports have been submitted to MWS and reviewed by technical staff: (1) Alden Laboratories Stormwater Testing Facility Study of CST Model 956, (2) EPA Environmental Technology Verification Report for CST Model 1056, and (3) Pine Street Stormwater Management Facilities Study of CST Model 2056. Based on the Alden Laboratories Study the **CrystalClean Separator by CrystalStream Technologies has been approved for use in Metro as a pretreatment unit with a 50% TSS removal rate**, provided that the project design is consistent with the following conditions:

1. The model selected for the project design must be sized in accordance with the following table and based on the peak flow of the Metro water quality design storm as specified in Volume I – Regulations Section 7.6.2.
   Qp = C*I*A
   Where:
   Qp = the peak flow through the proprietary BMP in cfs (Water Quality Treatment Flow)
   C = runoff coefficient
   I = rainfall intensity, 2.45 inches/hour for Metro
   A = the contributing drainage area for the BMP, in acres
2. The CrystalClean Separator may be used **on-line or off-line.**
3. CrystalStream Technologies must ensure all system designs conform to MWS Stormwater Regulations.
4. The design engineer (a Tennessee Professional Engineer) must approve the shop drawings for conformance to dimensions and design features. These approved shop drawings are to be submitted to Metro as part of the grading permit application. As-built certification of the units by a Tennessee Professional Engineer will be required prior to issuance of the Use and Occupancy Permit to the owner.
5. The maintenance plan for sites using this device shall incorporate, at a minimum, the manufacturer's recommended maintenance plan which must be submitted for approval by MWS.
6. This approval will expire **March 29th, 2017**, with the following exception. Metro reserves the right to recall approvals for reasons including, but not limited to: 1) restrictions placed by the Tennessee Department of Environment and Conservation, 2) product modifications or system failures indicating questionable performance capability, 3) changes in Metro stormwater regulations or policy, or 4) changes in the Technology Acceptance Reciprocity Partnership (TARP) or NJDEP protocols.

As a condition of this approval, CrystalStream must submit for approval the following information no later than **March 29, 2013**. Submit the following information in electronic format for review and distribution (such as PDF, TIF, JPEG, Word).

- The manufacturer recommended maintenance plan which contains, at a minimum, the requirements included in the Proprietary BMP Inspections and Maintenance Checklist, attached.
- Standard details of the approved models in the following table with internal/external bypass feature.

CrystalClean Separator Model	Inside Width (ft)	Inside Length (ft)	Plan Area (sq ft)	*Water Quality Flow Rate (cfs)
Model 646	4	6	24	0.53
Model 956	5	9	45	1.00
Model 1056	5	10	50	1.11
Model 1266	6	12	72	1.60
Model 1856	5	18	90	2.00
Model 2056	5	20	100	2.22
Model 2466	6	24	144	3.20

*Water Quality Flow Rate is based on Hydraulic Loading Rate = 0.022 fps

This approval is effective immediately; however, projects for which an Application for Grading Permit is received by MWS Stormwater Development Review Section prior to March 29, 2013 may be designed using the previously published 2009 MWS Proprietary Stormwater Quality Units Selection Guide for Pretreatment Applications. Projects received after March 29, 2013 that utilize the above referenced manufactured treatment device will be reviewed for compliance with the flow rates and conditions of this letter. Additional information regarding the Stormwater Management Regulations may be found at www.nashville.gov. If you have any questions regarding the above information, please contact Laura Jones with Stormwater Development Review by phone, 615-880-3832, or email, laura.jones2@nashville.gov.

Sincerely,

Roger D. Lindsey

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Enclosure:

MWS Stormwater Management Manual Interim Policy
Proprietary BMP Inspections and Maintenance Checklist